UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/971,719	10/04/2001	Scott Clinton Baggs	10004916-1US	3040

			EXAMINER
7590	12/01/2004		PATEL, KANJIBHAI B

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ART UNIT	PAPER NUMBER
2625	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>04 October 2001</u>.

2a) ☐ This action is **FINAL**.　　2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-22</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-11, 14-17, 20-229</u> is/are rejected.

7) ☒ Claim(s) <u>12,13,18 and 19</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>04 October 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
　　　　application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　Paper No(s)/Mail Date <u>10/4/01, 4/22/03</u>.

4) ☐ Interview Summary (PTO-413)
　Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)　　　　　　　　　　Office Action Summary　　　　　　Part of Paper No./Mail Date 20011004

DETAILED ACTION

Drawings

1.   Drawings filed on 10/4/01 have been approved by the examiner.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-11, 14-17 and 20-22 are rejected under 35 U.S>C. 102(e) as being

anticipated by Ancin (US 6,721,458 B1).

For claim 1, Ancin discloses a method, comprising:

obtaining image data for a first type of noise region in a digital image (step 705 in

figure 7 provides first type of noise; see column 8, lines 60-67; at high frequencies moiré

noise is similar to salt and pepper type noise as mentioned in specification page 7, line

10);

using said image data for said first type of noise region to locate a second type of

noise region in said digital image (step 709 in figure 7 provides a second type of noise

which is determined using step 705 "No" decision; see also column 8, lines 60-67; at

low frequencies moiré appears as large pixel clusters which corresponds to a second

tye of noise as shown at least page 4, line 24 of the specification); and

filtering said second type of noise region (in figure 7 at least low pass filter is used for filtering the second type of noise region).

For claims 21-22, see the rejection of claim 1 above.

For claim 2, Ancin discloses the method of claim 1, wherein said digital image comprises color image data (step 701 and step 712 in figure 7); wherein said first type of noise region comprises color image data (step 701 and step 712 in figure 7); and wherein said second type of noise region comprises color image data (step 701 and step 712 in figure 7).

For claim 3, Ancin discloses the method of claim 1, further comprising locating said first type of noise region in said digital image (at least step 705 in figure 7 determines the noise area).

For claim 4, Ancin discloses the method of claim 3, wherein locating said first type of noise region in said digital image comprises:

using an edge detect filter to locate an edge in said digital image (median filter in figure 7 can provide a edge or boundary preservation filter);

determining whether said edge is less than or equal to a first reference area (column 9, lines 26-57); and if said edge is determined to be less than or equal to said first reference area, tagging said edge as said first type of noise region (column 9, lines 26-44).

For claim 5, Ancin discloses the method of claim 3, wherein locating said first type of noise region in said digital image comprises using out-range pixel smoothing (column 12, lines 16-18) to locate said first type of noise region.

For claim 6, Ancin discloses the method of claim 1, further comprising allowing a user to decide whether said second type of noise region is filtered (in figure 7, alow pass filtering is done to filter the second type of noise).

For claim 7, Ancin discloses the method of claim 1, wherein using said image data for said first type of noise region to locate a second type of noise region in said digital image comprises:

locating in said digital image a group of adjacent pixels, each pixel of said group of adjacent pixels having image data substantially similar to the image data for said first type of noise region (figures 4-5, 8-9); and

determining whether said group of adjacent pixels is less than or equal to a second reference number (column 9 line 60 to column 10 line 13; threshold provides a reference number, for example 15 pixels as represented by threshold T1).

For claim 8, Ancin discloses the method of claim 7, further comprising allowing a user (figure 2 is a computer system which is operated by user input) to select said second reference area.

For claim 9, Ancin discloses the method of claim 7, wherein the image data for said first type of noise region comprises a gray scale value (column 2, lines 38-67); wherein the image data for each pixel of said group of adjacent pixels comprises a gray scale value(column 2, lines 38-67); and wherein the image data for a corresponding pixel of said group of adjacent pixels is substantially similar to the image data for said first type of noise region when the absolute value of the gray scale value of

said corresponding pixel subtracted from the gray scale value of said first type of noise

region is less than a threshold number (figures 7 and 10).

For claim 10, Ancin discloses the method of claim 9, further comprising allowing

a user (figure 2 is a computer system which is operated by user input) to select said

threshold number.

For claim 11, Ancin discloses the method of claim 7, wherein the image data for

said first type of noise region comprises color image data (steps 702 and 712 in figure

7); and wherein the image data for each pixel of said group of adjacent pixels comprises

color image data (figure 7).

For claim 14, Ancin discloses the method of claim 1, wherein filtering said

second type of noise region from said digital image comprises:

obtaining image data for a region in said digital image (column 9, lines 6-25);

computing average image data from the image data for said region 9column 9,

lines 26-44); and

mapping said average image data to said second type of noise region 9column

9,lines 45-57).

For claim 15, Ancin discloses the method of claim 14, wherein said region

comprises at least one pixel located adjacent said second type of noise region (figure 5,

8-9).

For claim 16, Ancin discloses the method of claim 14, further comprising

allowing a user (figure 2 is a computer system which is operated by user input) to select

said region.

For claim 17, see the rejection of claim 9 above.

For claim 20, Ancin discloses the method of claim 1, wherein filtering said second type of noise region comprises: subdividing said second type of noise region into a plurality of subsections (figure 10; step 1006);

obtaining image data for a region associated with each of said plurality of subsections (figure 10; step 1007) ;

computing average image data for each of said regions from its image data; and mapping said average image data for each of said regions to a corresponding one of said plurality of subsections 9column 11, lines 66-67).

Allowable Subject Matter

3.   **Claims 12-13 and 18-19** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other prior art cited

4.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tenze et al. (US 6,819,804 B2) discloses a noise reduction video system.

Adams, Jr. et al. (US 6,621,937 B1) disclose a removing chroma noise from digital images by using variable shape pixel neighborhood regions.

Adams, Jr. et al.(US 6,804,392 B1) disclose a removing color aliasing artifacts from color digital images.

Lee et al. (US 6,631,162 B1) disclose a signal adaptive filtering method, signal adaptive filter and computer readable medium for storing program therefor.

Yu et al. (US 6,636,645 B1) disclose an image processing method for reducing noise and blocking artifacts in a digital image.

Nagao (US 6,667,815 b1) disclose a method and apparatus for processing images.

Contact Information

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kanji Patel whose telephone number is (703) 305-4011. The examiner can normally be reached on Monday to Thursday from 8:00 a.m. to 6:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kanji Patel
Art Unit 26 25
11/26/04

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